



Number  915	Author Bruce W. Plowman	Date  06/01/06
	Title 2005 Statewide Archers Index of Furbearer Populations	

Work Plan #200298

Federal Aid Study/Job No.: W-26-R-37

Job No.: 14-C-4

## INTRODUCTION

The Division of Fish & Wildlife initiated the Archer's Survey in 1992 to monitor annual changes in populations of furbearer and other selected wildlife species. Numerous archery hunters from across Indiana participate with the survey annually. Participants record sightings of American badger, beaver, bobcat, bobwhite quail, coyote, domestic cat, fox squirrel, gray fox, gray squirrel, muskrat, opossum, rabbit, raccoon, red fox, river otter, ruffed grouse, striped skunk, white-tailed deer and wild turkey during the early archery season. A population index is tabulated to estimate the relative density for each species. Annual estimates for a given species are compared over time to examine long-term population changes. This report summarizes data collected during Indiana's 2005 archery season.

## METHODS

The 2005 Archer's Survey was conducted from October 1 to November 11. Each participating archery hunter received a standardized survey form, explanatory cover letter and postage-paid return envelope 1 week prior to the onset of the archery season. Archery hunters were requested to list the number of hours hunted, date hunted, county hunted and number of selected wildlife species observed during each hunt. Participants returned their completed survey form following the early archery season. An observation rate consisting of the total number of a given species sighted per 1,000 hunt hours was tabulated for each species and used to examine population trends over time.

## RESULTS

Archers recorded sightings of wildlife during 6,144 hunting episodes in 2005, resulting in 18,237 hours of hunting observations. Wildlife sightings varied according to region (Figure 1) and species (Table 1). Archery sightings of bobcat, red fox, river otter and striped skunk increased during 2005 while sightings of all other species decreased. White-tailed deer were the most frequently observed wildlife species, whereas raccoons were the most frequently observed furbearer, fox squirrels were the most frequently observed small game species and wild turkeys were the most frequently observed game bird.



Long-term data indicate that archer sightings of white-tailed deer increased over time (Figure 2), suggesting a growing deer population. Over the previous 5-year period, sightings of coyote, red fox, raccoon, opossum and skunk remained relatively stable, while bobcat sightings remained low and gray fox sightings continued to decline (Figure 3). Archer sightings of fox squirrel, gray squirrel and wild turkey sharply declined during 2005 but long-term data suggest these populations are abundant (Figure 4). Rabbit sightings declined during 2005 but remained relatively stable over time. Although bobwhite quail and ruffed grouse sightings have remained relatively stable over the previous 5-year period, they remain at historically low levels.

## **SUMMARY**

Indiana's Archer Survey is the only population monitoring mechanism that provides a statewide index for most furbearing species. Annual continuance of this survey is important for monitoring long-term population trends, identifying management and research needs and supplementing other population monitoring mechanisms. Survey efforts should continue and closely monitor population levels of gray fox, bobcat, bobwhite quail and ruffed grouse.

Any archery hunter interested in participating with the 2006 Archer's Survey, should send their name and address to:

Archery Survey  
Division of Fish & Wildlife  
562 DNR Road  
Mitchell, IN 47446

It is not necessary for archers who participated with the 2005 survey to resubmit their name and address.

**Thanks to all archers who participated with the 2005 Archer's Survey.**

Table 1. Statewide and regional sightings of wildlife per 1,000 hours of archery hunter observations during Indiana's 2004 and 2005 early archery seasons.

Species	Northwest		Northeast		North Central		Southwest		South Central		Southeast		Statewide	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Badger	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.2	0.0
Beaver	0.7	0.0	0.7	0.0	1.7	0.9	0.7	0.4	0.2	0.3	1.3	0.0	0.8	0.4
Bobcat	0.4	1.2	1.6	0.2	0.9	2.8	1.1	1.2	0.2	2.3	0.6	0.6	0.8	1.3
Bobwhite	64.4	66.2	8.1	31.1	44.5	26.0	36.3	38.6	16.3	9.5	18.7	2.5	27.7	26.9
Coyote	14.4	20.7	19.6	14.4	31.7	27.0	46.1	43.4	28.1	32.8	21.5	17.2	26.2	24.3
Deer	990.4	946.5	1112.5	1038.2	714.9	797.8	1040.8	806.3	719.5	756.4	728.6	769.9	892.7	856.0
Fox Squirrel	652.2	549.5	640.3	564.5	869.4	566.3	882.8	572.0	402.4	265.9	524.8	469.8	634.9	488.6
Gray Fox	1.8	1.5	2.0	0.2	1.3	0.5	0.4	1.2	0.2	0.7	0.0	0.6	1.0	0.7
Gray Squirrel	125.9	102.5	89.1	61.8	81.3	25.6	257.0	156.3	669.9	399.3	245.9	148.8	265.7	151.2
Grouse	9.2	8.4	7.2	0.7	2.1	5.6	2.1	4.0	12.0	11.5	5.3	9.5	6.9	6.4
Domestic Cat	19.1	24.9	26.8	24.8	36.4	35.3	15.8	12.3	11.5	10.2	16.2	8.6	20.3	18.6
Muskrat	0.7	1.2	6.3	3.7	3.0	0.5	1.1	0.8	0.5	0.0	5.0	0.0	2.9	1.5
Opossum	9.9	13.0	16.4	8.3	21.0	4.7	14.4	14.7	10.8	4.3	14.7	4.1	14.3	8.0
Rabbit	38.3	42.1	33.1	29.9	43.2	48.4	42.6	19.9	31.7	22.0	31.2	10.8	35.8	27.6
Raccoon	35.3	43.2	62.5	53.5	72.8	68.8	51.4	41.8	35.5	15.7	64.8	32.4	53.1	41.1
Red Fox	4.8	7.7	8.3	8.5	1.7	4.7	1.4	3.6	4.8	8.9	5.6	4.1	4.9	6.4
River Otter	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
Skunk	2.9	6.9	7.9	10.2	5.1	8.4	6.7	7.6	2.2	2.3	5.3	1.0	5.1	6.0
Turkey	232.6	157.6	122.8	205.7	15.4	15.3	358.3	255.8	594.5	255.7	584.3	427.2	334.0	234.1

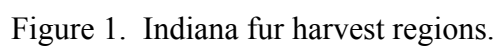


Figure 1. Indiana fur harvest regions.

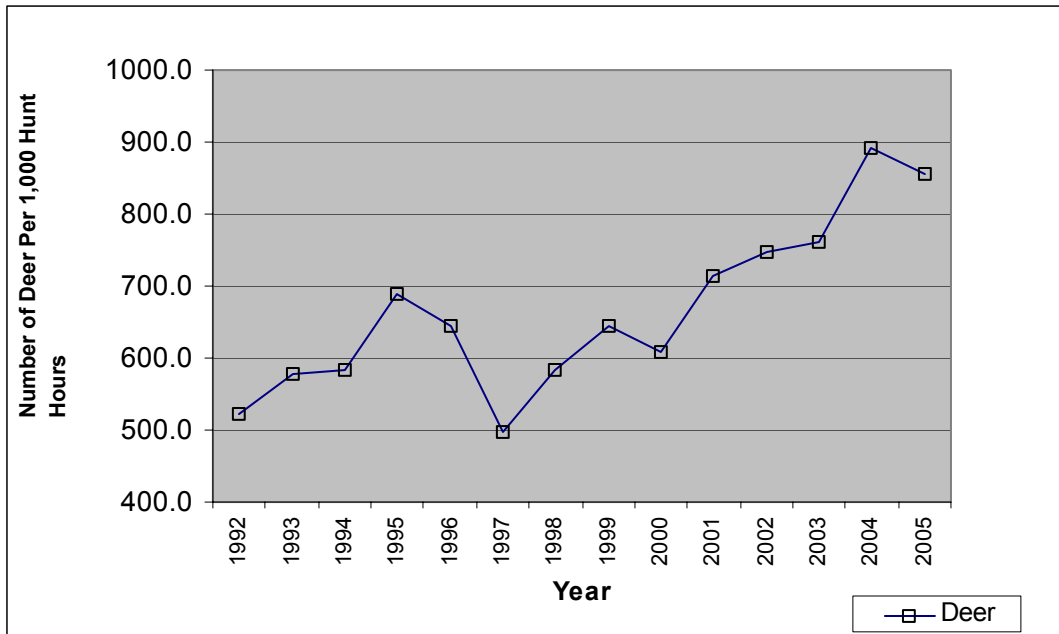


Figure 2. Number of white-tailed deer sighted by Indiana archery hunters for every 1,000 hours of hunting from 1992 to 2005.

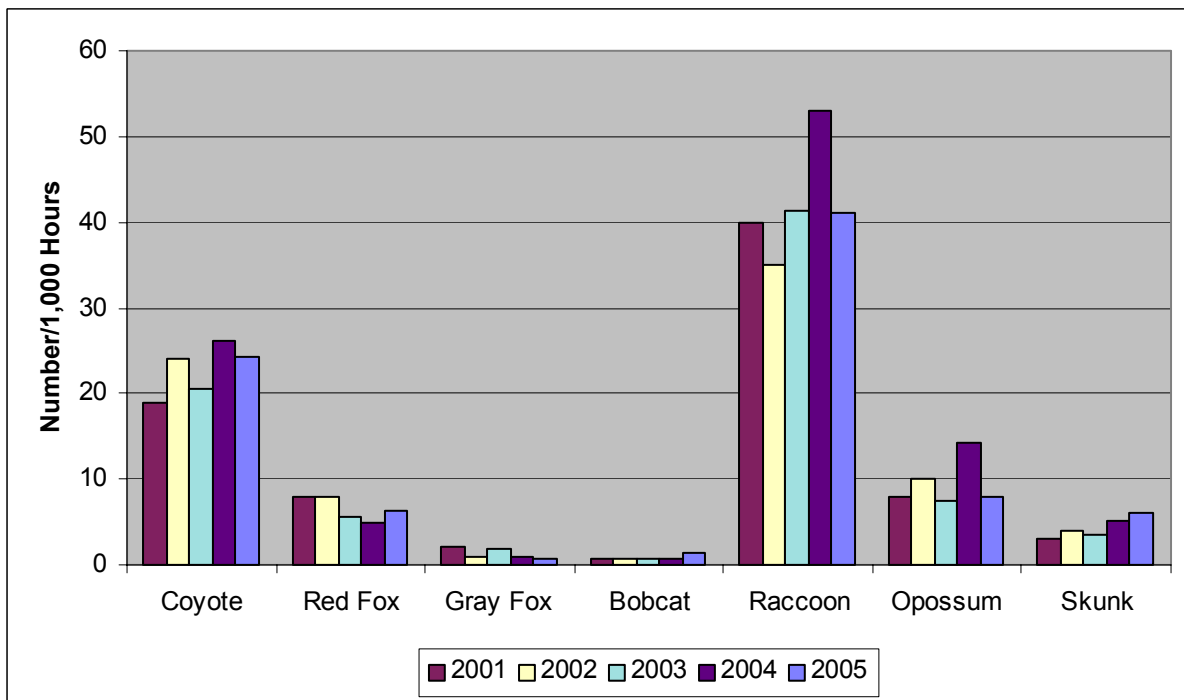


Figure 3. Number of coyote, red fox, gray fox, bobcat, raccoon, opossum and striped skunk sighted by Indiana archery hunters for every 1,000 hours of hunting from 2001 to 2005.

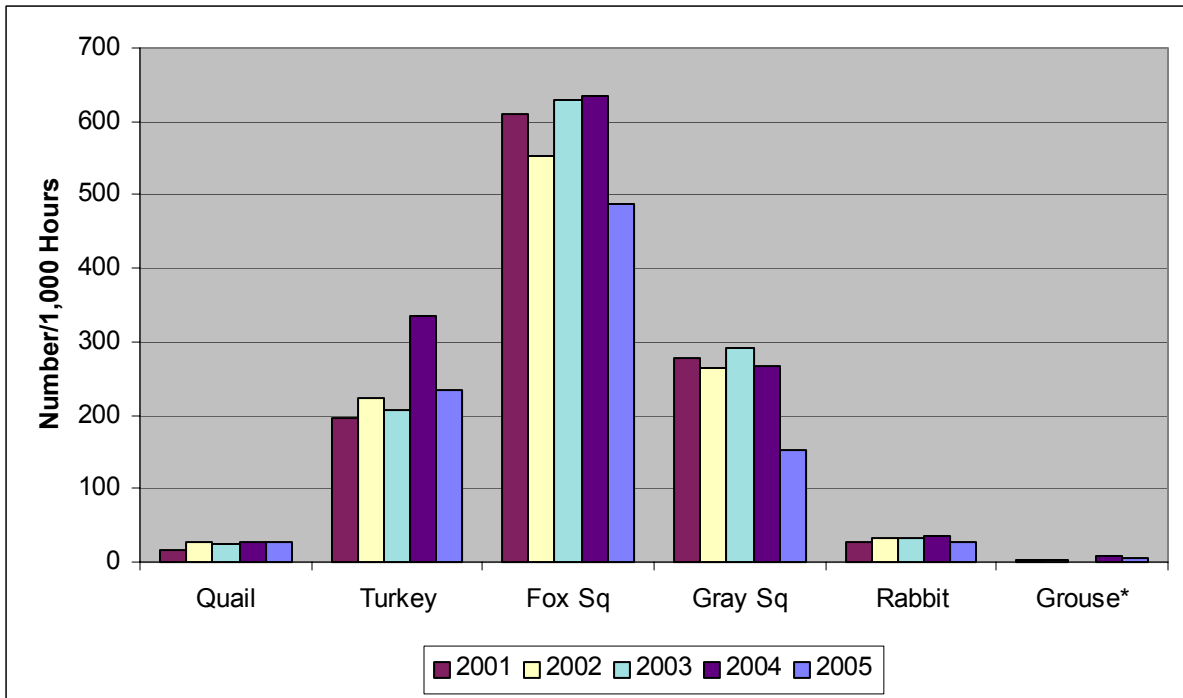


Figure 4. Number of bobwhite quail, wild turkey, fox squirrel, gray squirrel, rabbit and ruffed grouse sighted by Indiana archery hunters for every 1,000 hours of hunting from 2001 to 2005